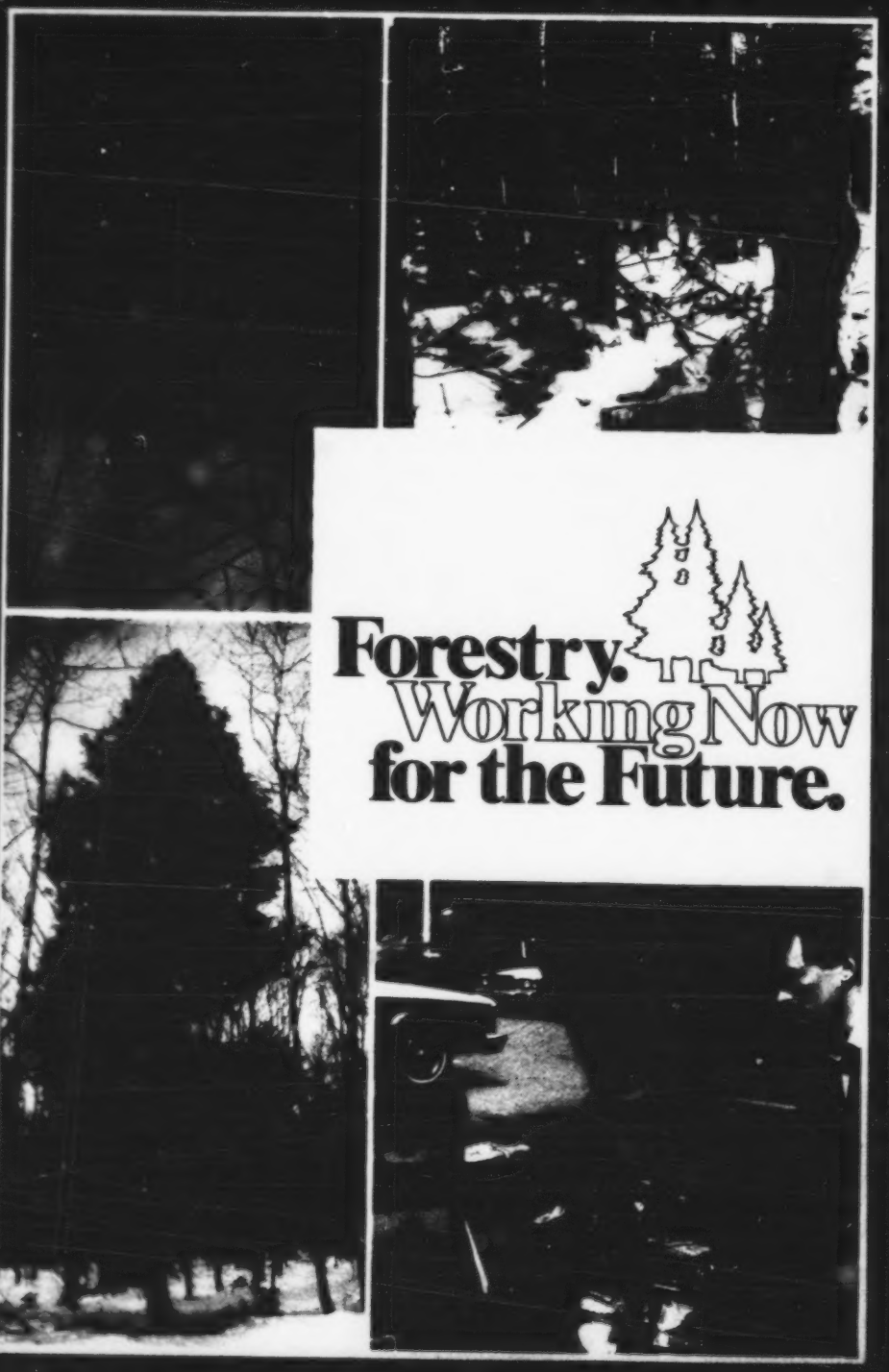
PRINCE EDWARD ISLAND

Annual Report

Department of Energy & Forestry
Fiscal Year: April 1, 1984 - March 31, 1985



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Department of
Energy and
Forestry

Annual Report for
April 1, 1984 - March 31, 1985

TO HIS HONOUR

THE HONOURABLE LLOYD G. MacPHAIL
Lieutenant-Governor of Prince Edward Island

May it please your Honour:

I have the honour to submit herewith the Annual Report of the Department of Energy and Forestry for the fiscal year April 1, 1984, to March 31, 1985.

I have the honour to be, sir,

Your obedient servant,

Allison Ellis

Allison Ellis
Minister of Energy and Forestry

Charlottetown
Prince Edward Island
December, 1985

Honourable Allison Ellis
Minister
Department of Energy and Forestry
P.O. Box 2000
Charlottetown, P.E.I.
C1A 7N8

Dear Mr. Minister:

I am pleased to submit the Annual Report of the Department of Energy and Forestry for the fiscal year 1984-85.

Respectfully submitted,

W G Bustard

W.G. Bustard
Acting Deputy Minister
Department of Energy and Forestry

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DEPARTMENT OF ENERGY AND FORESTRY

ENERGY AND MINERALS BRANCH

INTRODUCTION

The principal responsibilities of the Energy and Minerals Branch include the development of energy policy, monitoring the evaluation of energy alternatives, provision of conservation and alternatives information to the public, maintaining interprovincial and international liaisons, and regulating and encouraging the exploration for minerals and oil and gas within the province.

With the end of provincial delivery of the EnerSave for Industry and Commerce Program on March 31, 1984, the focus of energy programs was changed to emphasize information outreach, especially to the benefit of Island homeowners. A Residential Energy Advisory Program was formalized, with provision for on-site visits by trained staff where necessary. The infrared thermography scan service for homeowners continued on a nominal fee basis, and furnace efficiency test kits were made available again for loan to Island residents. "Hands-On" energy workshops were offered with the cooperation of the government of Canada and were very well received. Finally, P.E.I. EnerPool had another successful year as the provincially-sponsored vanpooling operation.

Negotiations with the Government of Canada aimed at effecting lower electricity prices on P.E.I. continued. By March 1985 good progress had been made towards eliminating provincial responsibility for debt on the cable interconnection with New Brunswick, and towards setting in place a package of short-term relief to ratepayers.

Work began on the Energy Subagreement under the Province's Economic Regional Development Agreement (E.R.D.A.) with the federal government. Responsibilities were split between various agencies of government, and the principal contribution of the Energy and Minerals Branch was the preparation and publication of a General Information Brochure describing all activities to be undertaken under the Agreement.

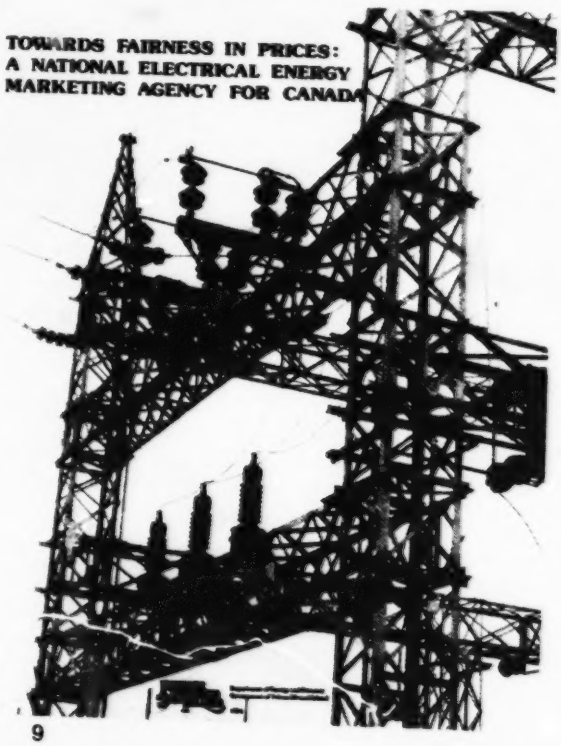
The mineral sector on Prince Edward Island was not active in 1984-85. The Department contributed to the production of a new "Geological Highway Map of New Brunswick and Prince Edward Island" by the Atlantic Geoscience Society to be published in May 1985. Negotiations were begun aimed at the signing of a Mineral Development Agreement with the Government of Canada to evaluate the province's mineral aggregate resources. Preparations began in earnest for the Provincial Mines Ministers' Conference to be hosted at Charlottetown in September, 1985.

ELECTRICITY MARKETING PROPOSAL

In the spring of 1984 the Minister published a discussion paper on electrical energy marketing in Canada. The Paper was broadly circulated in Canada and formed the basis of a formal agenda item at the annual meeting of Energy Ministers in Yellowknife, NWT.

Known as "NEEMA" for National Electrical Energy Marketing Agency, the Minister's proposal was designed to address the tremendous inequity in electricity prices across Canada. Based on the principle of pooling, the proposed agency would buy "economy" or secondary electrical energy from the various producing utilities and resell the energy at an average price to consuming utilities like N.S. Power, N.B. Power and Maritime Electric.

The proposal received widespread study.



REGULATORY MATTERS

Before the P.E.I. Public Utilities Commission:
In the summer and fall of 1984 Energy Branch staff, assisted by special legal counsel representing the Minister, coordinated and presented an 'intervention' before the Commission on behalf of government. Submissions were made as part of the omnibus hearing of an application by Maritime Electric on a variety of matters including the Utility's allowed rate of return.

Notice of intervention was filed in August and the first of two volumes of testimony and evidence was prefiled in late September. The purpose of government's Intervention was to assist the Commission and to this end several expert witnesses were put forward by the Minister. During the course of the hearings, legal counsel also engaged in extensive cross-examination of the witnesses of the applicant, Maritime Electric.

Government's contentions were:
(1) That the rate of return requested by Maritime Electric may be excessive and should be carefully reviewed by the Public Utilities Commission. Related to this matter, that the Cost of Commodity clause may be an inappropriate mechanism and contrary to the best interests of the customers of Maritime Electric;
(2) The 100 KVA qualifying level for the interruptible option should be retained;
(3) The Residential All-Electric rate should continue to be offered to existing Residential All-Electric customers:
(4) The proposed Maritime Electric policy with respect to customer-owned generation interconnections is inadequate because it may discourage appropriate alternate energy development and cogeneration.

The hearings continued into November and constituted a very thorough examination of the Utility's case. The Commission's Decision and Order set the Utility's rate of return somewhat lower than had been sought by Maritime Electric. It also maintained the 100 KVA qualifying level for interruptible customers. The Residential All-Electric rate was discontinued but existing customers in this category were 'grandfathered'. Maritime Electric was instructed to give further study to the Cost of Commodity clause and other matters.

Before the National Energy Board:
In the spring of 1984 Maritime Electric brought a complaint before the National Energy Board alleging that N.B. Power was contravening its power export licences for the sale of energy to certain U.S. customers. Maritime Electric argued that N.B. Power was exporting energy to the United States at a lower price than to Prince Edward Island. This, the company maintained, was not in the public interest and in contravention of the Board's long standing policy and the term of the export licences. The National Energy Board held a full hearing into the matter.

TABLE NO. 1

IMPORTS AND PRICES OF SECONDARY ENERGY BY PROVINCE FOR 1983[1], AND IMPACTS WITH A NATIONAL ELECTRICAL ENERGY MARKETING AGENCY (NEEMA) IN PLACE

Purchasing Province	MW.h (Rate, ¢/kW.h)		Weighted Avg. (Rate, ¢/kW.h) Purchase Rate	Benefit (Disbenefit) Under NEEMA: % of Internal Sales[2]	
N.B. (from N.S.)	56,850	(7.15)	2.41	4.74	0.77 } 5.03
N.B. (from Que.)	3,966,107	(2.79)	2.41	0.38	4.26 }
N.S. (from N.B.)	672,183	(3.24)	2.41	0.83	1.54
P.E.I. (from N.B.)	378,909	(5.08)	2.41	2.67	17.56
Ont. (from Que.)	1,689,494	(1.41)	2.41	(1.00)	(0.48) } (0.76)
Ont. (from Man.)	760,888	(1.12)	2.41	(1.29)	(0.28) }
Man. (from Sask.)	100,314	(0.78)	2.41	(1.63)	(0.51)
Sask. (from Man.)	295,808	(1.53)	2.41	(0.88)	(0.70)
Alta. (from B.C.)	130,137	(1.08)	2.41	(1.33)	(0.17)
B.C. (from Alta.)	43,059	(0.16)	2.41	(2.25)	(0.09)

Notes: (1) Preliminary Estimates.

(2) Per cent of internal sales approximates the rate change to customers that would be experienced if the benefit/disbenefit were passed on to all customers in the system. Where a province purchases from two other provinces, the benefits/disbenefits are additive, as shown by brace brackets.

The Government of Prince Edward Island through the Minister of Energy and Forestry was a formal Intervenor at these hearings represented by an Energy Branch staff member and by legal counsel. Written and oral submissions were made on behalf of the Minister which supported Maritime Electric in their cause.

In January of 1985, the N.E.B. found in favour of Maritime Electric, N.B. Power announced that it would appeal the decision. A finding in favour of Maritime Electric's position would mean savings in purchased power costs for Prince Edward Islander's of as much as $2 million to $6 million per year according to N.B. Power's own submissions.

The Energy Branch kept a watching brief throughout this hearing process and is expected to continue to be active in the appeal.

PUBLIC OUTREACH PROGRAM

As part of its conservation promotion and energy awareness activities, the Energy Branch offers numerous programs and participates in interprovincial and international energy committees. Supplying more information on all kinds of energy will continue to be an important function of the Branch, which has already established goodwill and credibility with the people of the province.

Energy Action Week: Energy Action Week, a combined effort on the part of the Department of Energy and Forestry, Charlottetown Chamber of Commerce and EM&R, was held during the week of November 3-10, 1984. The success of the week was clearly evident by the number of people that participated in the programs and activities. The week used the efficient use of energy as a focal point and involved people of all ages. Activities included an Energy Pace for grade school students, a solid fuel technical seminar, lunch time energy films for the general public and an energy fair at the Confederation Court Mall to finish off the week.

Workshops: In cooperation with CMHC and EM&R, the Energy Branch presented several workshops on energy conservation for the general public in the fall of '84. The workshops were very well received and represented a departure from the traditional seminar style in that the participants were able to have hands-on experience with various methods of energy retrofit.

Vehicle Efficiency Test Program: The V.E.T. Program ran from April 30, 1984, through to July 6, 1984. A total of 10 communities and towns from Tignish to Souris were involved by having the testing unit in their area for a period of one working week. A total of 884 vehicles were tested during the 10-week program with each community showing an equal interest in the program. This program was cost-shared with the P.E.I. Energy Corporation.

P.E.I. EnerPool: The EnerPool Program continues to demonstrate the potential for energy conservation in ride-sharing transportation. It began in 1978 and presently operates four vans, with each van capable of reducing motor fuel consumption by 47,000 litres per year. The Branch remains an active member of the Canadian Association of VanPool Operators (CAVPO), an organization devoted to the promotion of ride-sharing across Canada.

Furnace Efficiency Tests: To assist homeowners in assessing the operating condition of their home heating system, eight furnace efficiency test kits were made available free of charge on an overnight or weekend loan basis from the Energy Branch office in Charlottetown and from the five Regional Services Centres across the province. Simple operating instructions were provided with each kit and testing was done by Branch staff for homeowners requiring assistance.

FIGURE 1
P.E.I. FORMS & USES OF ENERGY 1983

FORMS OF ENERGY

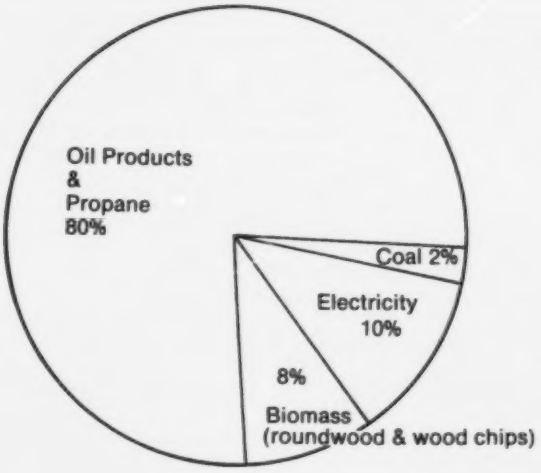


FIGURE 2
P.E.I. FORMS & USES OF ENERGY 1983

ENERGY USE BY ECONOMIC SECTOR

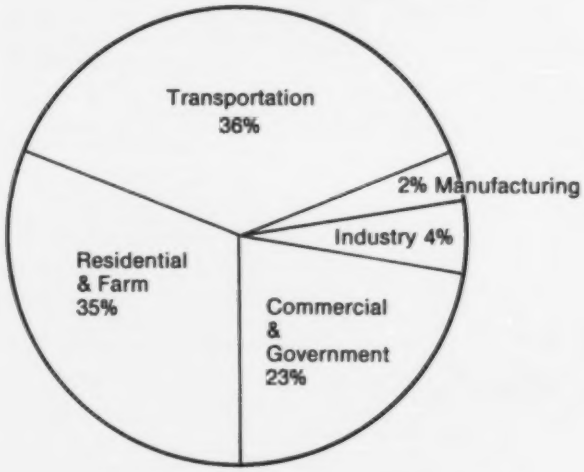
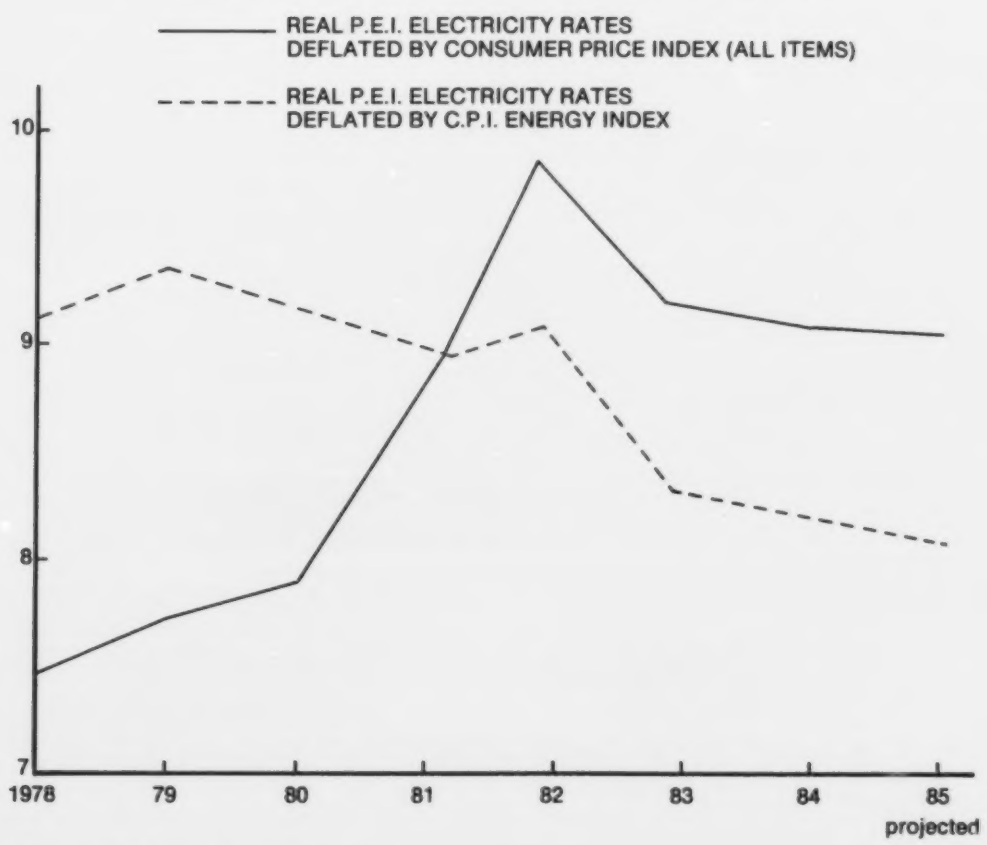


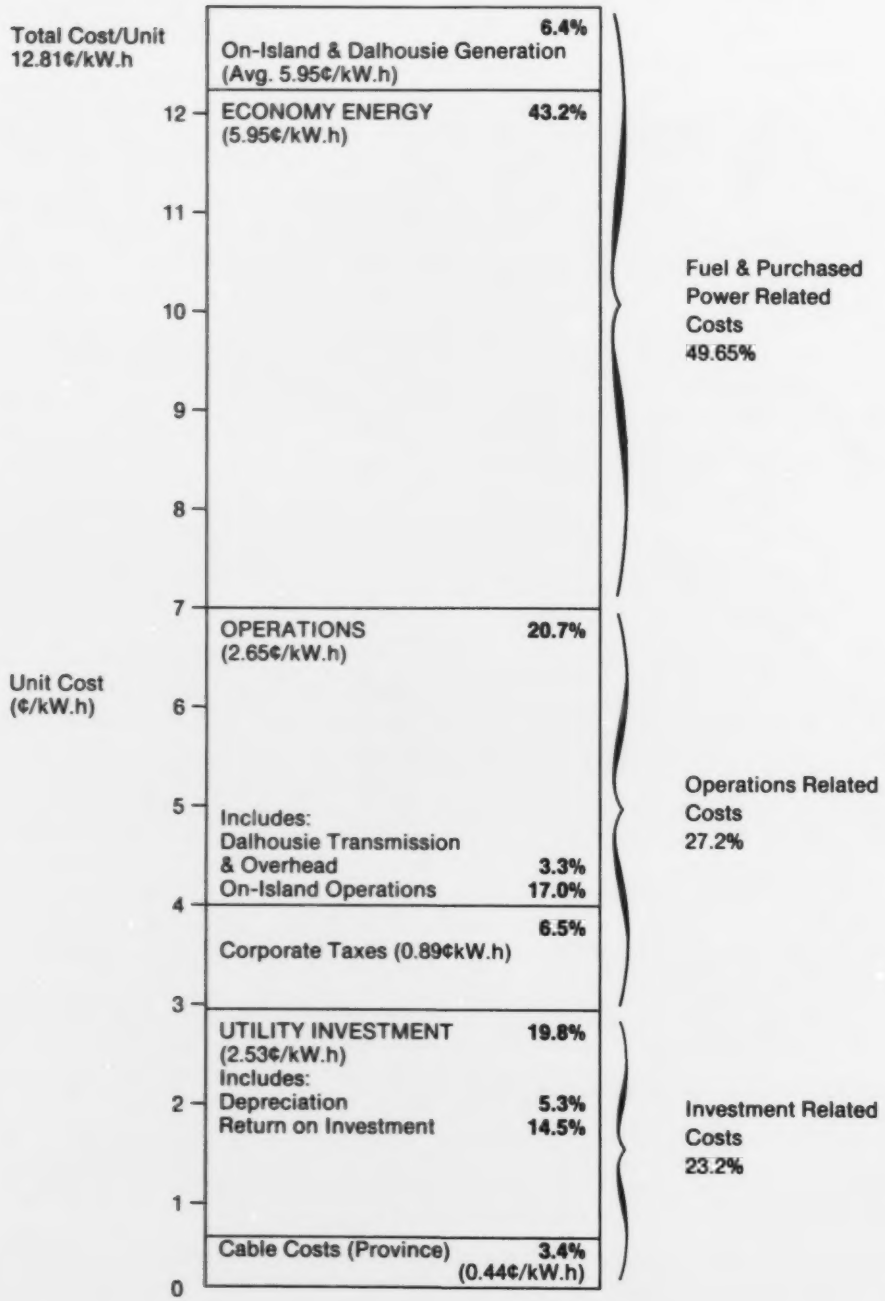
FIGURE 3
REAL ELECTRICITY RATES ADJUSTED BY TWO PRICE INDICES



Source: Statistics Canada Cat. 57-003 1983-IV
Proportions are based on units of energy. In 1983 about 16.5 'petajoules' of energy were used in the province, the equivalent of about 2.6 million barrels of crude oil.

FIGURE 4

COMPONENTS OF COST OF ELECTRICITY AT THE CONSUMER LEVEL



Residential Energy Advisory Service: As part of its ongoing information function, in September, 1984, the Department formalized a "Residential Energy Advisory Service" which allows for discretionary home visits by Energy and Minerals Branch personnel in addition to telephone consultations. Where justified, infrared thermography scans of houses may be undertaken for a modest fee.

Pat Mooney of the Energy Branch poses beside the infrared thermography unit used to assess heat loss under the Residential Energy Advisory Service.

RESEARCH AND PLANNING

The Energy Branch continued to develop expertise in both alternative and conventional energy planning. In particular the complex system of electricity supply was a focus of study since reducing the Province's electrical energy costs remains a high priority.

Analysis shows that about 50% of P.E.I.'s electrical costs at the consumer level are generation and purchased energy costs, while the remaining half are operations, investment costs and taxes. The Energy Branch has continued to provide Government with greater insights into ways of reducing all costs associated with supplying electricity to the Island.

Monthly summary reports on the Residential Energy Advisory Service are being compiled. In January, 1985, for example, Branch staff responded to 72 inquiries from the general public on topics ranging from renewable energy to home heating systems. Three house visits were conducted during this period and more were schedule, including several scans for February.

Display Program: Portable displays focusing on the theme of energy conservation and alternate fuel sources were presented at community exhibitions, energy fairs and shopping malls throughout the province.

These efforts seem to be paying off. Figure 3 on page 12 shows the 'real price' of electricity i.e. the price relative to the purchasing power of the dollar has begun to decrease since 1982 and projections are that it will continue to decrease as measures to reduce electricity costs are put in place.

The Energy Branch continued to review alternative energy technologies and possible applications on Prince Edward Island. Projects using biomass energy are frequently examined for their economic potential to save energy dollars and make Island business more energy independent.

INTERGOVERNMENTAL ACTIVITIES

The Branch has continued to send representatives to meetings and conferences sponsored by the Northeast International Committee on Energy (N.I.C.E.). Membership in the Interprovincial Advisory Council on Energy (I.P.A.C.E.) has enabled the Government of P.E.I. to have a strong voice in the collective efforts by the provinces to influence Federal Government Policy on matters of common importance to the various regions.

Energy Branch representatives hold places on the Maritime Energy Education Coordinating Committee (MEECC), the Committee of Provincial Geologists, the Intergovernmental Working Group on the Mineral Industry and the Coordinating Committee of Maritime Electrical Utilities.

The Branch often serves as liaison with the Federal Government on energy and minerals related matters.

OIL, NATURAL GAS AND MINERALS

Tne Energy and Minerals Branch has the responsibility of administering and enforcing the Province's Oil and Natural Gas Act and the Mineral Resources Act. In so doing, it is the responsibility of the Branch to issue oil and natural gas permits and leases as well as mineral licenses and leases. During the 1984-85 fiscal year oil and natural gas exploration permits were issued to Chevron Canada Resources Ltd., Dome Petroleum Limited, Claude B. Anger and BRO Resources Ltd. The permits granted the permittees "the exclusive right to do or cause to be done geological and geophysical work and exploratory drilling for all Crown Reserves of oil and natural gas" on approximately 2,866,400 acres of onshore and offshore land. While no exploratory drilling was done this year considerable time was spent by these companies on geophysical reprocessing work. There were no mineral licenses or mining leases issued during this fiscal year.

In an attempt to improve the oil and natural gas investment climate in P.E.I. resulting from a lack of oil and gas resource taxation legislation, the Mineral Branch undertook a study of current Canadian oil and gas taxation regimes with the intention of developing its own system of taxation. By the end of the 1984-85 fiscal year the study recommendations were being evaluated by various government departments.

The 1984-85 fiscal year saw the Province enter into serious negotiations with the Federal Government for a Mineral Development Subsidiary Agreement under the Province's Economic Regional Development Agreement (ERDA). The discussions centered around the evaluation of the Island's coarse aggregate deposits with the hope of bringing the Province closer to self-sufficiency in this resource. Negotiations were continuing at the end of the fiscal year.

The Energy and Minerals Branch spent considerable time during the 1984-85 fiscal year planning for and making arrangements for the 42nd Provincial Mines Ministers Conference and Council of Provincial Energy Ministers Meeting which was scheduled to be held in Charlottetown in September of 1985.

During the 1984-85 fiscal year the Branch established a drill core storage facility which was located at Beach Grove, just outside Charlottetown. The purpose of the facility is to provide a single location where Island core can be stored and eventually examined. Core was collected from as far away as Gays River in Nova Scotia and deposited at the Beach Grove facility.

DEPARTMENT OF ENERGY & FORESTRY
EXPENDITURE SUMMARY
FISCAL YEAR 1984-1985

EXPENDITURES

Departmental Management	$ 339,740	
		$ 339,740
Energy and Minerals Branch		
Branch Management	253,412	
Canada/P.E.I. Energy Agreement	1,620	
Maritime Electric Tax Rebate	2,654,000	
E.R.D.A. Energy Sub-Agreement	46,457	
		$2,955,489
Forestry Branch Branch Management	$1,082,049	
Bunbury Nursery	163,811	
Firefighting	31,065	
Hedgerow/Shelterbelt	23,413	
Hybrid Poplar	42,116	
Headquarters Administration	61,828	
Extension	94,172	
Woodlot Technology Transfer	42,156	
Silviculture Development	143,347	
Industry Development	55,706	
Biomass Inventory	63,468	
Seedling Production	278,708	
Eastern District - Crown Land	162,164	
Central District - Crown Land	180,455	
Western District - Crown Land	166,533	
Eastern District - Administration	134,222	
Central District - Administration	126,735	
Western District - Administration	119,398	
Forestry Branch Capital	11,825	
		$2,983,171
DEPARTMENT TOTAL		$6,278,400

DEPARTMENT OF ENERGY & FORESTRY
REVENUE SUMMARY
FISCAL YEAR 1984-1985

REVENUES

Departmental Management	$ 1,886	
		$ 1,886
Energy and Minerals Branch		
Gas & Oil Licenses	153,198	
Fees and Services	350	
Sales (Miscellaneous)	276	
E.R.D.A. Energy Sub-Agreement	9,885	
		$ 163,709
Forestry Branch		
Branch Management	131,576	
U.I. Job Creation Program	10,545	
Bunbury Nursery	118,675	
Hedgerow-Shelterbelt	3,716	
Hybrid Poplar Project	39,687	
Headquarters - Administration	54,408	
Extension	76,523	
Woodlot Technology Transfer	37,098	
Silviculture Development	125,919	
Industry Development	49,019	
Biomass Inventory	55,312	
Seedling Production	244,613	
Eastern District - Crown Land	142,704	
Central District - Crown Land	157,487	
Western District - Crown Land	146,481	
Eastern District Administration	117,404	
Central District Administration	111,040	
Western District Administration	104,708	
Seedling Sales	4,778	
Eastern District Crown (Sale of Wood)	11,232	
Central District Crown (Sale of Wood)	4,809	
		$1,747,734
DEPARTMENT TOTAL		$1,913,329

FORESTRY BRANCH

INTRODUCTION

The primary responsibilities of the Forestry Branch are the delivery of a comprehensive forest management assistance program for private woodlot owners, management of Crown land, research and development for production and processing of wood fibre and technical and marketing assistance to local forest industries. In addition, the Forestry Branch is responsible for forest fire control and the operation of the Bunbury Nursery.

Almost 48% or 276,000 hectare (ha.) of Prince Edward Island's land mass is forested. This resource represents both an opportunity and a challenge for the development of a viable forest industry based on a healthy and productive forest. All surveys indicate that Prince Edward Island's forests are among the most productive in the country. However, past harvesting techniques and insect and disease damage have all taken their toll. Today our forest industry is faced with limitations caused by poor wood quality, inconsistent markets and lack of investment capital.

Although attempts have been made at forest renewal in past years, the signing of the 5 year Forest Resource Development Agreement (F.R.D.A.) between the governments of Canada and Prince Edward Island in 1983 has meant that funding is now available for long term planning. Under this 5 year agreement the Department of Energy and Forestry and the Canadian Forestry Service jointly administer $20.144 million in the delivery of the following programs:

PROGRAM DESCRIPTION	$ MILLIONS
1. Private Land Management	4.494
2. Crown Land Management	4.040
3. Forest Development	
3.1 Forest Extension	.877
3.2 Woodlot Technology Transfer	.554
3.3 Silviculture Development	1.602
3.4 Industry Development	.652
3.5 Forest Biomass Inventory	.507
3.6 Seedling Production	2.166
4. Administration	5.242

Of this total, $13.688 million are federal dollars while the remaining $6.456 million is contributed by the province.

The objectives of the agreement are:

1. To permit the development of a wood fuel industry to double the consumption of wood from 168,000 cubic meters (70,000 cords) to 336,000 cubic meters (140,000 cords) by 1988. Thus, potentially decreasing fuel oil imports by 111,000 barrels/year.

2. To permit the Province to attain a level of production in sawn and processed lumber of 21 million board feet/year.

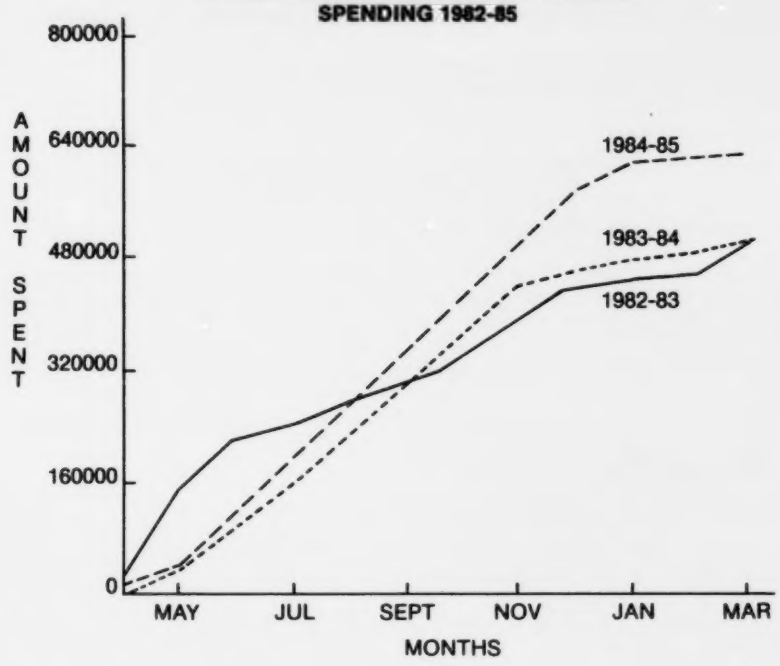
3. To increase direct employment in the forest industry from the present 400 person-years to 600 over the five year agreement.

4. To permit the development of income and employment in associated industries such as consulting, silvicultural contracting, Christmas trees, furniture, crafts and maple syrup.

Additions to the Forestry Branch staff included nine new positions under the Administration Program; three each in the Western, Eastern and Central districts. The eight new technicians and one forester prepare management plans and carry out other duties under the Private Land Management Program. A new position of training coordinator, was staffed in Industry Development. The coordinator is responsible for curriculum development for the silviculture worker program and liaison between the Department, Holland College, and the forest industry employers and employees.

Highlights of the past year were the achievement of two significant goals under the Private Land Management Program: the number of seedlings planted on private land reached 1,000,000, while the number of plans signed reached 1,000. The popularity of this program continued to grow with the addition of 282 new clients in fiscal 84/85.

FIGURE 5
PRIVATE LAND MANAGEMENT PROGRAM
SPENDING 1982-85



DISTRICT OPERATIONS

Private and Crown land forest management programs are delivered by staff of the three district offices located at Wellington, Beach Grove and Southampton. Technical assistance is provided to woodlot owners in the development of management plans suited to the composition and potential of their woodlots and the owners' objectives.

In 1984-85 spending levels for work on private land reached a new high of $629,000.00. This money was spent on work such as stand improvement, site preparation, roads, boundaries, and reforestation.

EASTERN DISTRICT

The Eastern District employs ten full time staff: seven on the private land program and three on Crown land management.

In 1984 approximately 120 ha. of private land and 54 ha. of Crown land were planted with 492,000 seedlings grown at the J. Frank Gaudet Tree Nursery. Of this total 66% were planted by private contractors, 28% by government crews and 3% each by hedgerow establishment crews and private individuals.

Applications for assistance under the private land program continued to keep staff very busy. As of March 31, 1985, 115 applications had been received, 118 management plans had been written and 84 of those plans signed. This brought the Eastern District's totals to 520 applications, 448 plans written and 350 plans signed to date.

Stand improvement work saw 5 ha. completed on Crown land and 260 ha. done on private land.

Two hundred and seventy four hectares of site preparation were completed using the following methods:

Eden Brush Rake	= 33%
Root Rake	= 25%
Hydro-Axe	= 9%
Rome Disc	= 21%
Herbicide	= 12%

Almost 71 ha. of Crown land stumpage was sold by public tender. Commercial cuts were the largest single category with 60 ha., fuelwood cuts 7 ha., and U-cuts the remaining 4 ha.

Extension activities were an integral part of District activities during the year. Eastern District staff participated in "Trees for Canada" with local Boy Scout troops, Belfast Community School, a course for local forest contracting firms, tours of Demonstration Woodlots and The Small Woodlot Equipment Demonstration.

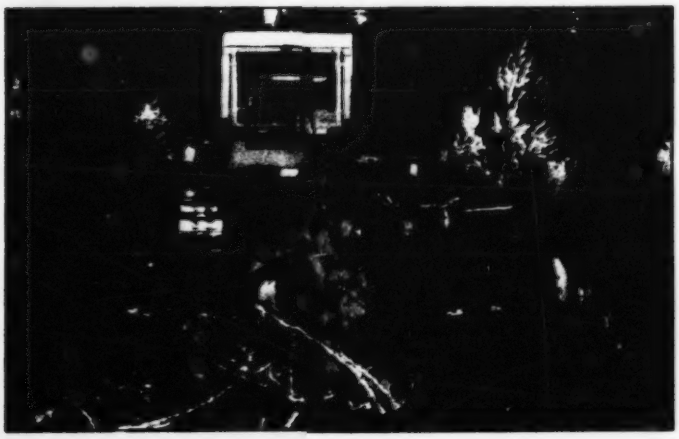
TABLE 2
CANADA/PRINCE EDWARD ISLAND
FOREST RESOURCE MANAGEMENT AGREEMENT

CUMULATIVE TOTALS TO DATE

DISTRICT	# OF APP.	# OF PLANS WRITTEN	# OF PLANS SIGNED
West	500	440	406
Central	510	430	325
East	520	448	350
Province	1530	1318	1081

TABLE 3
TOTAL APPLICATIONS IN 1984-85

DISTRICT	# OF APP.	# OF PLANS WRITTEN	# OF PLANS SIGNED
West	120	99	106
Central	104	104	106
East	115	118	84
Province	339	321	296



Rome disc site preparing old cutover for planting in subsequent year.

CENTRAL DISTRICT

The boundaries of the Central District run from Stanley Bridge and Borden in the west to Vernon Bridge and Savage Harbour in the east.

In 1984-85, staff of the Central District received 104 applications for assistance under the private land program, they wrote 104 plans and signed 106. This brings totals to 510 applications, 430 plans written and 325 plans signed to date.

Road construction totaled 13 km. on private land, and 7 km. on Crown land. Maintenance on existing roads saw another 10.9 km. completed and 13 km. of right-of-way cut.

In advance of the 1985 planting season 115 ha. of site preparation were completed, 11 ha. on Crown land, the rest on private lands.

Stand improvement work on private land totaled 270 ha. finished to standards while Crown land crews completed another 19 ha.

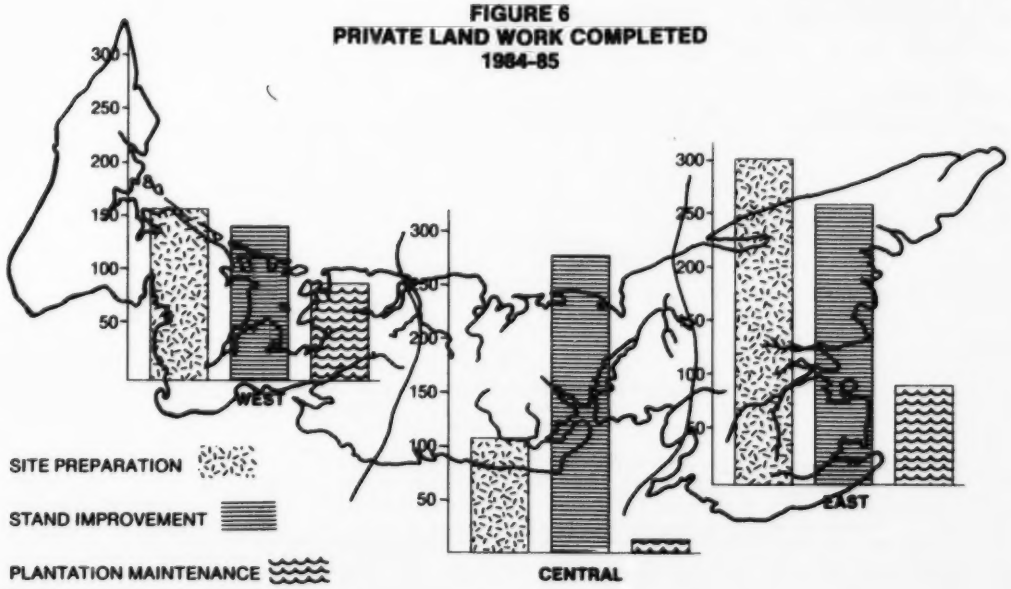
Staff took part in various extension activities: tours of private woodlots for interested clients, participation in the Small Woodlot Equipment Demonstration, the Community School in Hunter River, a contractors' course and presentations to various schools and community groups.

TABLE 4
CANADA/PRINCE EDWARD ISLAND
FOREST RESOURCE DEVELOPMENT AGREEMENT
1984/85 WORK COMPLETED

PRIVATELAND

ACTIVITIES	WEST	CENTRAL	EAST	TOTAL
Roads (km)	12	13	24	49
Boundary (km)	83	3	37	123
Site Prep (ha)	117	104	300	521
Plantation Main. (ha)	82	5	90	177
Stand Improve. (ha)	140	270	260	670

FIGURE 6
PRIVATE LAND WORK COMPLETED
1984-85



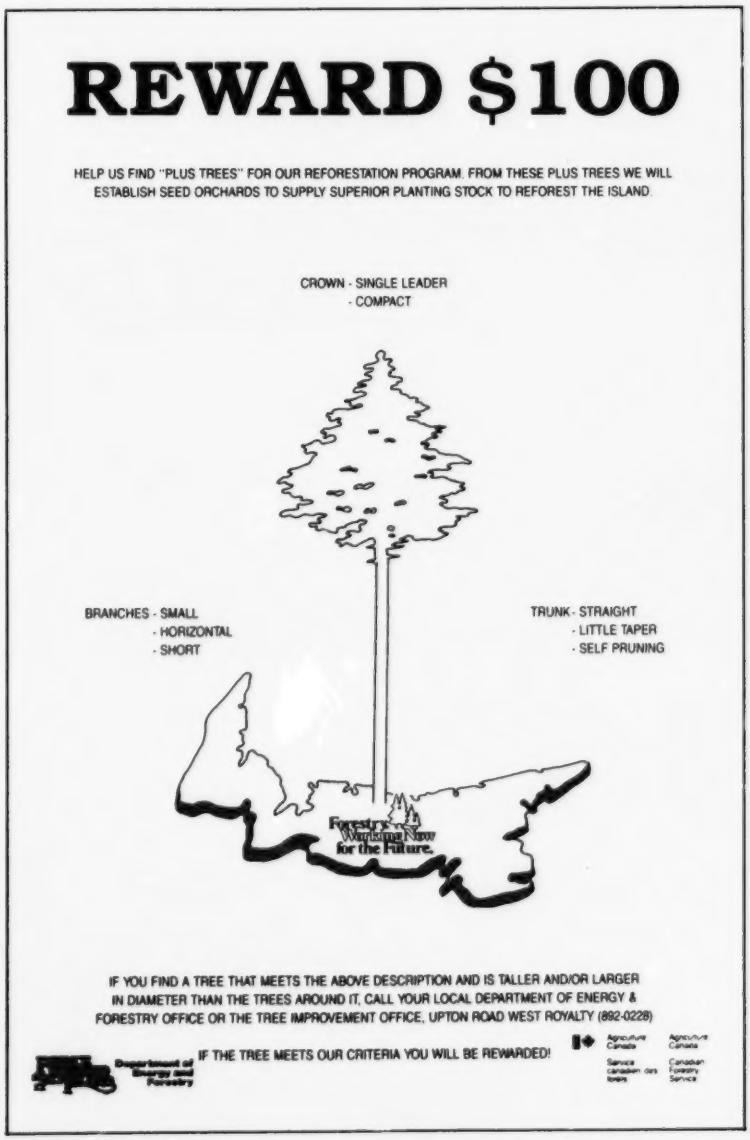
WESTERN DISTRICT

Staff of the Western District manage 8,000 ha. of Crown lands and deliver the Private Land Management Program which assists woodlot owners to plan and carry out forest improvements.

During 1984-85, 16 km. of roads and 83 km. of boundary lines were constructed by contractors working on private land. Western District staff often encounter problems with drainage on many of the properties found in the area. To meet this challenge High-Mac Roads are now being constructed on many woodlots to allow better drainage of water from the roadbed and longer periods of access during spring and fall.

Crews from the District completed 4.5 ha. of stand improvement work while contractor crews were able to finish 140 ha. on private land.

Plantation maintenance on private land totaled 82 ha. of work done with an additional 45 ha. completed on Crown properties.


REWARD $100
HELP US FIND "PLUS TREES" FOR OUR REFORESTATION PROGRAM. FROM THESE PLUS TREES WE WILL ESTABLISH SEED ORCHARDS TO SUPPLY SUPERIOR PLANTING STOCK TO REFOREST THE ISLAND
CROWN - SINGLE LEADER
- COMPACT
BRANCHES - SMALL
- HORIZONTAL
- SHORT
TRUNK - STRAIGHT
- LITTLE TAPER
- SELF PRUNING
Forestry Working Now for the Future.
IF YOU FIND A TREE THAT MEETS THE ABOVE DESCRIPTION AND IS TALLER AND/OR LARGER IN DIAMETER THAN THE TREES AROUND IT, CALL YOUR LOCAL DEPARTMENT OF ENERGY & FORESTRY OFFICE OR THE TREE IMPROVEMENT OFFICE, UPTON ROAD WEST ROYALTY (892-0228)
IF THE TREE MEETS OUR CRITERIA YOU WILL BE REWARDED!

SILVICULTURAL DEVELOPMENT

In 1984-85 some 39 plus trees were selected for use in the black spruce and larch breeding programs. As an incentive to get woodlot owners to identify plus tree candidates, a reward of $100/tree was offered. Woodlot owners with plus trees are asked to enter into an agreement that allows the Department to collect seed and scions (twigs) from these trees for a period of 5 years.

Mike Butler, Tree Improvement Specialist with the Department of Energy and Forestry, explains the purpose of a research project to Premier Lee during the Open House held in May. ▲

Grafting of scions (twigs) from plus trees onto root stock is one of the first steps leading to the production of seed for higher quality trees in the future.▶

The seed is collected in summer and fall when the trees have a good seed year. After cleaning, seed is stored for later use in progeny tests. These tests help to determine which trees do best and if they exhibit the characteristics of their parents. Eventually seed will be collected from these trees and used to produce high quality stock.

The twigs or scions which are collected in early winter are taken back to the nursery and grafted unto ordinary root stock. The grafted rootstock is then placed in a greenhouse where it is raised as a normal seedling. After growing for approximately 18 months in the greenhouse the clones are outplanted in a seed orchard. In about 6 years the orchards produce seed which is used to grow better quality seedlings at the provincial nursery.

This year 732 white spruce and 751 eastern larch grafts were prepared for outplanting in 1986 and '87. Provenance test plots for red pine were established at both Duvar and the 48 Road, while a larch seed orchard was established at the J. Frank Gaudet Tree Nursery in West Royalty.

A scion exchange program continued this year with samples from nine trees being sent to the Tree Improvement Council, a few to J.D. Irving Ltd., and to the Department of Natural Resources in New Brunswick.

The tree improvement section also assisted the Canadian Forestry Service in establishing two hybrid spruce and larch progeny tests at Duvar and the 48 Road.

Permanent sample plots were established in ten representative plantations and natural stands throughout the Province. These plots were established in 20-45 year old stands to measure their response to various thinning treatments. Each plot has a set of thinned and unthinned strips which are measured at 5 year intervals to determine their volume at various stages of development.

Hedgerow establishment continued in the summer of 1984 with 102,000 trees planted for farmers across the province. In addition a brochure was produced by the Institute of Island Studies, entitled "Hedgerows...can help." Which details the beneficial effects of hedgerows on crop protection, wildlife habitat, and soil and water conservation.

BIOMASS INVENTORY

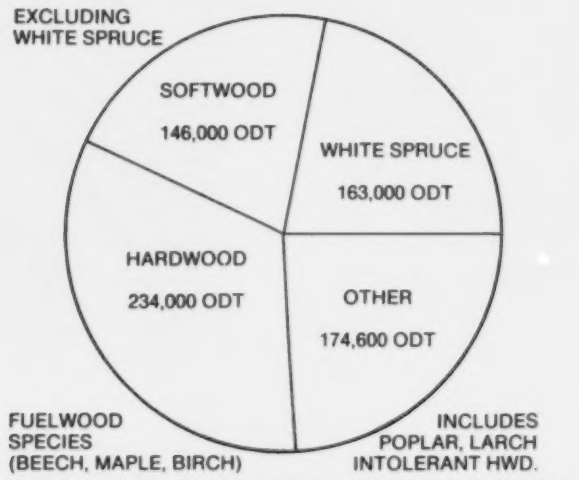
In 1984-85, the staff of the Biomass Inventory Section completed a pilot study to identify clearcuts that had occured between 1980 and 1983. Satellite and high altitude aerial photography were used to locate and measure these cutover areas. It was found that the best results came from the high altitude photographs and information obtained from them was used to update the forest inventory.

Prince Edward Island's first comprehensive forest inventory was completed in 1982. Since the inventory provide an estimate of the provincial forest resource at only one moment in time, it's usefulness depends on how well it is updated, and how accurately it can predict future growth.

Growth studies continued on both softwoods and hardwoods. The goal of these studies is to produce site index curves for the Island's commercial tree species.

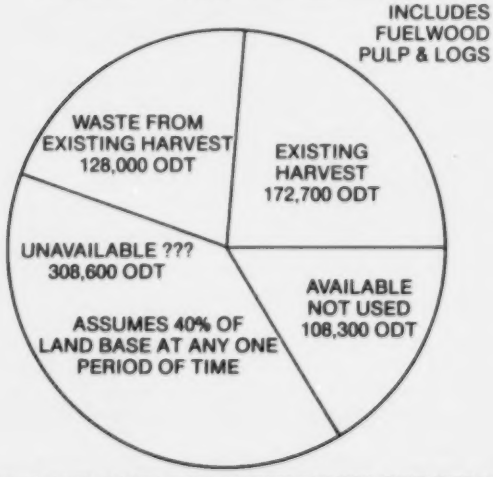
Information on growth and depletion is fed into a computerized input/output model which can predict, for example, sawlog supply in the year 2010 given various levels of planting and precommercial and commercial thinning. This information, gathered from growing P.E.I.'S "model forest" on a computer, has been used in the development of the Provincial Twenty-Year Forestry Plan.

FIGURE 8
PROVINCIAL SUSTAINABLE HARVEST BY COVERTYPE



TOTAL SUSTAINABLE HARVEST 717,600 ODT PER YEAR

FIGURE 9
PROVINCIAL SUSTAINABLE HARVEST



TOTAL SUSTAINABLE HARVEST 717,600 ODT PER YEAR

SEEDLING PRODUCTION

Working at the J. Frank Gaudet Tree Nursery in West Royalty, Seedling Production staff grow bareroot and container seedlings for reforestation programs on private and Crown lands. The production facilities include two gutter-connected, double layer polyethylene greenhouses with a total growing space of 3,700 square meters (approximately 1 acre) and 35 ha. of farm land for the production of bareroot stock.

In the spring of 1984 1.5 million bareroot and container seedlings were delivered to planting sites throughout the province. These seedlings were planted by contractor and government crews on both Crown and private land.

The species produced include white spruce, black spruce, red pine, Austrian pine, Balsam fir, hybrid poplar and eastern white cedar.

In March, 1984, approximately 1.5 million container seedlings were grown for reforestation work to be done in the spring of 1985. This procedure of growing seedling crops well in advance of when they are needed stems of course from the biological characteristics of tree seedlings. Staff not only have to wait for good cone years — years when cones are produced in abundance for a particular species; but they also have to keep sufficient seed in cold storage to ensure supply of each species over a number of years. Good cone years can occur as frequently as every two years or as infrequently as every seven years. This necessitates careful planning of planting programs. A seedling planted on private land in any one year may actually have come from a seed or cone which was produced upwards of eight years previously.

Such planning horizons are typical of much of the work done in forestry and illustrate the necessity for the many long term forest management programs which Government undertakes.

TABLE 5
SEEDLINGS SHIPPED SPRING, 1984

SPECIES	NUMBER
Red Pine	267,600
Austrian Pine	63,600
White Spruce	549,200
Black Spruce	436,600
Hybrid Poplar	23,700
Balsam Fir	115,700
Eastern White Cedar	14,500
TOTAL	1,470,900

TABLE 6
SEEDLINGS GROWN FOR 1985 PLANTING

SPECIES	NUMBER
Red Pine	264,000
White Pine	40,000
Austrian Pine	40,000
White Spruce	407,000
Black Spruce	340,000
Eastern Larch	190,000
Hybrid Poplar	30,000
Balsam Fir	155,000
TOTAL	1,466,000

TABLE 7
SEEDLINGS PLANTED UNDER F.R.D.A.

DISTRICT	PRIVATE	CROWN	OTHER
West	288,000	96,000	83,000
Central	204,000	18,000	93,300
East	300,000	164,000	33,000
TOTAL	792,000	278,000	209,000

Weeding container plugs to ensure one tree in every hole.

FOREST EXTENSION

A public information and education campaign was developed in co-operation with the Canadian Forestry Service. It outlines activities designed to heighten public awareness of the Island's forest resources and to encourage sound forest management practices.

A major accomplishment was the creation of the Forestry Information Program Wordmark.

Forestry.
Working Now
for the Future.

Designed to highlight all forestry advertising, the wordmark is now being used by the Forestry Branch on many different publications and signs.

A colorful foldout brochure, "A Doorway to New Prosperity" was produced to provide general information on Prince Edward Island's forests and forest industry.

A media campaign was launched on radio and in newspapers consisting of a series of information ads describing programs under the Forest Resource Development Agreement.

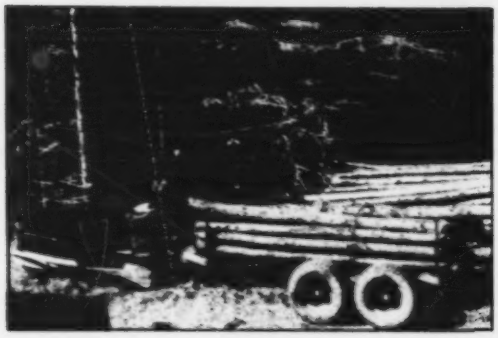
An Open House was held at the J. Frank Gaudet Tree Nursery as part of the Department's participation in National Forest Week. During the summer months the Forestry Exhibition Trailer visited nine community fairs across the province. Displays based on the theme, "Getting To Know Our Forests," attracted some 2,000 visitors.

Work continued on the six Demonstration Woodlots across the Province with most of the emphasis being placed on developing the interpretive trails and writing of the brochures for woodlots at Brookvale, Valleyfield and Camp Tamawaby. These woodlots, as well as the ones at Foxley River, Auburn and New Harmony demonstrate good management techniques in woodlots typical of those in the areas where they are located.

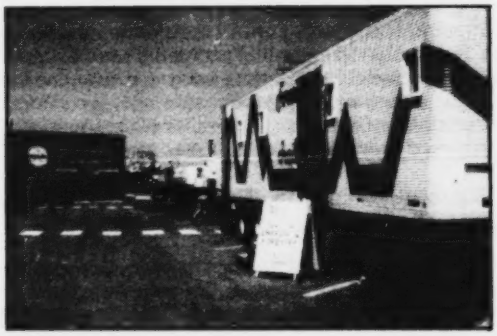
A new signage program identifying "High Profile Sites" was also initiated in 1984. Fifty candidate sites were selected on the basis of visibility from highly traveled roads and demonstration of management techniques such as plantations or thinnings. These signs are now in place and drawing positive public reaction.

Courses in non-professional chainsaw use were held across the Island for such groups as the Charlottetown Environmental District, Katimavik, the Energy Corporation, Environment 2000 and members of the general public who use chainsaws.

Winter activities included forest management courses at M.E. Callagan, Hunter River, and Belfast Community Schools, and the Annual Best Island Grown Christmas Tree Contest.



A SKOGIS tracted forwarder was shown at the Equipment Demonstration and drew many comments and considerable respect.



The Forestry Information Trailer was a feature at many fairs. Close to 2000 people visited the displays.

Future woodlot owner evaluates ATC at Small Woodlot Equipment show.

Horse logging was, as always, a popular event at the Small Equipment Demonstration Day with the horse and owner putting on an excellent show of team work.

INDUSTRY DEVELOPMENT

The Industry Development section assists sawmill owners and other small forestry-related businesses to access financial assistance, technical information and marketing intelligence. Staff also are involved in the co-ordinating of training for silvicultural workers along with the recruiting of trainees.

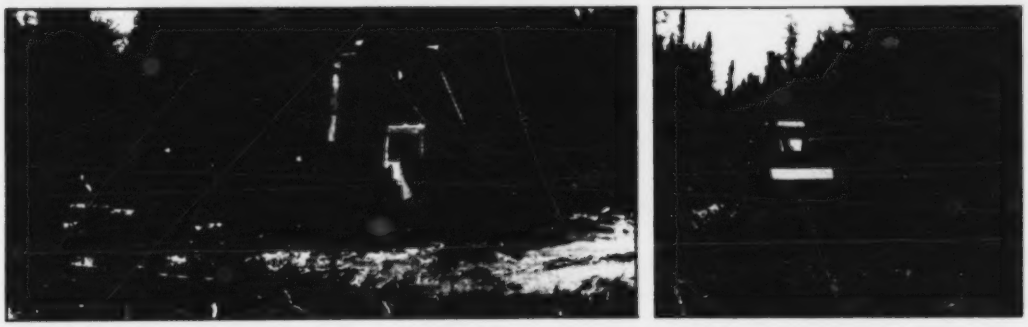
Staff worked with several sawmill owners with regard to loan applications for assistance from the Department of Industry and other funding agencies. The technical advisory service provided by the Department encourages sawmill modernization and increasing the Island's capability to produce graded lumber. In this regard, two sawmills completed major modernization projects and two new mills were constructed, one in Hopefield and one in Tignish.

Small companies, one which manufactures fencing materials from silvicultural wastes, and the other Christmas wreathes, received assistance and are now successful additions to the forest industry.

Shipping and quality control requirements were explored by staff seeking ways to ship Christmas trees to Japan. Needle retention problems were experienced due to harvesting before dormancy. Indications are that special treatment of trees to prevent needle drop will be tried next year. A study was completed on the potential of the Province's maple syrup resource. A computer program to help growers assess the economics of their enterprises was developed also. The program is designed to assess the potential of proposed operations and to assist the owner in preparing a sound financial plan.

Staff assisted the P.E.I. Development Agency in conducting market surveys to determine the sales potential of potted Christmas trees, maple products and fencing supplies.

The new position of Training Co-ordinator was created in response to the labour shortage experienced by silvicultural contractors. Priority was given to the development of a course curriculum, and the recruitment of candidates for a C.E.I.C. sponsored Silviculture Worker Course. Working closely with Holland College, the Department helped in the training of 45 silvicultural workers, all of whom found steady work with contractors throughout the province.



High floatation tires demonstrated on a wet site in Prince County. The forwarder when fully loaded was able to traverse formerly inaccessible sites without creating serious site disturbances.

The award for Best Overall Student was presented to Steven Lank (left), graduate of the Holland College Silviculture Worker Program, by J.P. Arsenault, Director of Forest Operations with the Department of Energy and Forestry.

WOODLOT TECHNOLOGY TRANSFER

As in past years, the highlight of the year was the Small Woodlot Equipment Demonstration Day. Held in Brookvale, the demonstration drew almost 450 people to view thinning techniques and extraction equipment. One highlight of the day was a demonstration, by two professionals, of the skills used by old-time woodsmen in such events as the axe throw, cross-cut sawing and chainsaw carving.

During the past winter three pieces of extraction equipment were constructed for testing under various woodlot conditions. A skidding bar, double-drum yankee yarder and tractor winch were tested in the extraction of wood from both hard and softwood stands. Time and production figures were recorded for later analysis.

BUNBURY NURSERY

Operations at the Bunbury Nursery Garden Center resulted in a retail sales increase of 8% in 1984-85 over the previous year's level.

Public demand for extension services continued to expand with many requests for information on insects, diseases and planting practices. Staff participated in several radio and television shows and gave a number of presentations to community schools, Women's Institute groups, as well as staff of the various Regional Services Centers.

The Nursery Superintendent served on the Greenhouse and Ornamental Advisory Committee of the Atlantic Crops Committee. Activities included shrub evaluation at the nursery and bedding plant trials which are carried out at the Agriculture Canada Research Station.

FOREST FIRES

The number of fires was down from last year's total. Fires consumed 201 ha. in the three Districts with incendiary fires numbering 14, fires of unknown origin 12, other industry 6, forest industry 5 and recreation 1 for a total of 38 fires.

Most of these fires occurred in April and May due in large part to spring grass fires. Cutovers were the largest single category, in terms of area burned, accounting for 194 ha. of the total.

SPECIAL PROJECTS

A major forestry project was carried out on Crown land in the Central and Eastern Districts by people hired by the P.E.I. Energy Corporation. The principal activities included harvesting non-commercial stands (stand reclaimation and salvage), thinning of healthy natural stands, and the clearing of road and trail right-of-ways.

A total of 135 people were employed for an average of 10 weeks each. Much of the wood produced will be chipped and burned at Parkdale's Energy From Waste Plant, which supplies heat to the Queen Elizabeth Hospital. The remaining sawlogs and hardwood fuelwood were sold by public tender.

A summary of work completed is shown in table 8:

TABLE 8

WORK COMPLETED	CENTRAL	EAST	TOTAL
A. Plantation Main. (ha.)	—	1.0	1.0
B. Stand Rec. (ha.)	26.1	16.6	42.7
C. Thinning (ha.)	21.0	0.7	21.7
D. R-O-W (km.)	9.9	6.7	16.6
E. Salvage (ha.)	1.2	—	1.2
F. High-Profile Sites	—	2	2
G. Wood Produced (Cords)	1104	644	1748

Plastic tubing is replacing the traditional sap bucket in commercial Maple Syrup operations. This line feeds into a central collector which holds the sap until it is shipped to the sugar shack for processing into syrup.

Dan Compton, MLA and former Speaker of the Legislature, stands beside two 4 year olds. The smaller being Bradley McKnight, the taller a black spruce planted on a former clear cut area on Mr. Compton's property in Belle River.

Ken Mayhew (right) discusses felling techniques with three young men hired under the P.E.I. Energy Corporation special employment project.

Bogey-wheeled skidding sulky developed by Forintele Canada was put through its paces at the Equipment Demonstration.

David Smith, a Christmas tree grower from Mayfield, assisted in Christmas tree needle retention tests as part of an export market investigation. Here David holds up a tree which has been bagged in plastic to reduce moisture loss when in cold storage.